

GENERAL COURSE OUTLINE
TROY STATE UNIVERSITY SYSTEM
MAIN CAMPUS
Updated: Spring 2003

PHY 2263 -- Physics with Calculus II

TEXT: *Physics for Scientists and Engineers, Fourth Edition*, by Serway, Sanders Publishing.

CATALOG DESCRIPTION

Principles of electricity, magnetism, and optics. *Prerequisite:* PHY 2262 (Physics with Calculus I), PHY L262 (Physics with Calculus I Lab); *Corequisite:* PHY L263 (Physics with Calculus II Lab), MTH 1126 (Calculus II).

COURSE OBJECTIVES

To demonstrate a knowledge of--

1. The laws and principles of basic physics as they relate to the interaction of matter and energy and their conservation
2. Vibration and wave motion
3. Sound
4. Electric forces and electric fields
5. Electric energy and capacitance
6. Current and resistance
7. DC circuits
8. Magnetism
9. Induced voltage and inductance
10. Alternating current circuits and electromagnetic waves
11. Reflection and refraction of light
12. Mirrors and lenses
13. Wave optics
14. Optical instruments
15. Scientific facts and the history, principles, issues, generalizations, and the laws of physics, contributions from different countries and cultures to the knowledge of physics, and the relationship of physics to other sciences and their implications and applications
16. The role and implications of physics for daily living and techniques for addressing global and ethical issues in science.

To demonstrate an ability to--

17. Apply the laws and principles of basic physics to the solution of problems within a calculus framework

OR

18. Recognize the fundamental issues involved in problems of physics
19. Successfully solve physics problems
20. Address global and ethical issues in physics and apply scientific processes to the solution of problems encountered in daily activities

ADDITIONAL SERVICES: AMERICANS WITH DISABILITIES ACT: Any student whose

disabilities fall within ADA must inform the instructor at the beginning of the term of any special needs or equipment necessary to accomplish the requirements for this course. Students who have or may be dealing with a disability or learning difficulty should speak with the instructor, contact the Office of Adaptive Needs Program (Trojan Center 215), or call 670-3220/3221. Various accommodations are available through the Adaptive Needs Program. The faculty in the School of Business makes every effort to accommodate unique and special needs of students with respect to speech, hearing, vision, seating, or other possible disabling conditions. Please notify the instructor as soon as possible of requested accommodations or ways to help.

CHEATING POLICY: The SGA and the Board of Trustees have approved a TSU Honor Code. The University has adopted a firm policy for incidents of academic dishonesty with potentially severe and long-term consequences for violators. All exams and outside work are to be considered as individual assignments unless instructed otherwise in writing. No unauthorized [i.e., by the instructor, beforehand] assistance may be given or received on any work submitted for grading. Giving unauthorized assistance is also considered “cheating”. The first incident will result in no credit for that assignment and the second incident will result in failure in the course. Students should be aware of the TSU Honor Code, the Academic Code, and the Penalties for Misconduct as published in the Oracle [available online from TSU homepage]. A friendly note of caution: my operational definition of plagiarism is five or more words used together by a second author in the same sequence as presented by their first author, without attributing the idea to the first author. Ideas and theoretical concepts should be attributed to their originator. Using quotation marks for longer strings of words is required. The consequences for plagiarism are harsh: one small occurrence, one letter grade, two small occurrences, two letter grades, etc. However, a single flagrant attempt at deception, once discovered, will result in an automatic failure in the course. You must give your work credibility by citing credible references in support of premises, facts, and expert opinions. In three words: Prudence, Credibility, and Integrity.

ATTENDANCE POLICY

University Policy: In registering for classes at the University, students accept responsibility for attending scheduled class meetings, completing assignments on time, and contributing to class discussion and exploration of ideas.

A student will be excused for class absence for circumstances beyond the student's control or if the student has been required to attend an activity sponsored by the University. Faculty members who sponsor activities that require class absences must send a list of student names to each member concerned at least three days before the scheduled absence.

Faculty policy: Faculty members may levy academic penalties upon unexcused absences; however, such penalties for unexcused absences will be a part of each course syllabus and will be distributed to each class at the beginning of each term, and a copy filed in the department office.

INCOMPLETE WORK POLICY

Incomplete grades are assigned at the discretion of the instructor. Students should refer to the appropriate bulletin for policies regarding the removal of incomplete grades.

GRADING SCALE

90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

GENERAL COURSE OUTLINE
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MAIN CAMPUS
Updated: Spring 2003

PHY L263 -- Physics with Calculus II Laboratory (1-2)

TEXT: *Physics Laboratory Experiments Fourth Edition*; by Wilson, Heath Publishing.

CATALOG DESCRIPTION

Laboratory work emphasizes basic principles of lecture topics, the use of measuring instruments and the interpretation of data. *Corequisite:* PHY 2263 (Physics with Calculus II).

COURSE OBJECTIVES

To demonstrate a knowledge of--

1. Hooke's law
2. Standing waves in a string
3. Standing waves in a pipe
4. Electric field mapping
5. Resistivity
6. Ohm's law
7. Voltmeter and ammeter
8. DC circuits
9. RC time constant
10. Inductance
11. AC circuits
12. Light and optics

To demonstrate an ability to--

13. Work cooperatively in team oriented working environment
14. Use technology in gathering information
15. Utilize mathematical skills to interpret and communicate data

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VII. GRADING SCALE

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